UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,134	05/30/2007	Mark D. Erion	2358.0080002/RWE/RAS	9214

26111 7590 07/28/2009

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.
1100 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER	
SHIAO, REI TSANG	

ART UNIT	PAPER NUMBER
1626	

MAIL DATE	DELIVERY MODE
07/28/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/580,134	ERION ET AL.	
	Examiner	Art Unit	
	REI-TSANG SHIAO	1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 May 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *83,100,232 and 241-255* is/are pending in the application.

4a) Of the above claim(s) *83 and 100* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *232 and 241-255* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 May 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/01/08, 8/13/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

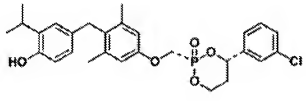
1. Amendment of claims 100, 232, and 241, cancellation of claims 1-82, 84-99, 101-231, and 233-240 and addition of claims 242-255 in the amendment filed on May 15, 2009 is acknowledged. Claims 83, 100, 232 and 241-255 are pending in the application. No new matter has been found. Since the newly added claims 242-255 are commensurate within the scope of the invention, claims 83, 100, 232 and 241-255 are prosecuted in the case.

Information Disclosure Statement

2. Applicant's Information Disclosure Statements filed on August 13, 2007 and May 01, 2008 have been considered. Please refer to Applicant's copies of the 1449's submitted herein.

Responses to Election/Restriction

3. Applicant's election with traverse of election of Group IX claims 232, in the reply filed on May 15, 2009 is acknowledged. An election of a compound, i.e.,



, as a single species is also acknowledged. The traversal is on the grounds that Applicants submit that the

compounds, compositions and methods of Claims 80, 100, 232, 241, and 242-255 should all be examined together under the proper application of unity of invention

This is found not persuasive, and the reasons are given *infra*.

Claims 83, 100, 232 and 241-255 are pending in the application. The scope of the invention of the elected subject matter is as follows.

Claims 232 and 241-255 are drawn to compounds/compositions of formula (VII) thereof.

The claims 83, 100, 232 and 241-255 herein lack unity of invention under PCT rule 13.1 and 13.2 since the compounds defined in the claims lack a significant structural element qualifying as the special technical feature that defines a contribution over the prior art, see Ryono et al. CAS: 141:395288. Ryono et al. disclose similar biphenyl phosphonic compounds, see RN:788824-02. Accordingly, unity of invention is considered to be lacking and restriction of the invention in accordance with the rules of unity of invention is considered to be proper. Furthermore, even if unity of invention under 37 CFR 1.475(a) is not lacking, which it is lacking, under 37 CFR 1.475(b) a national stage application containing claims to different categories of invention will be considered to have unity of invention if the claims are drawn only to one of the following combinations:

(1) A product and a process specially adapted for the manufacture of said product', or

(2) A product and a process of use of said product; or

(3) A product, a process specially adapted for the manufacture of the said product, and a use of the said product; or

(4) A process and an apparatus or means specifically designed for carrying out the said process; or

(5) A product, a process specially adapted for the manufacture of the said product, and an apparatus or means specifically designed for carrying out the said process.

And, according to 37 CFR 1.475(c)

if an application contains claims to more or less than one of the combinations of categories of invention set forth in paragraph (b), unity of invention might not be present.

However, it is noted that unity of invention is considered lacking under 37 CFR 1.475(a) and (b). Therefore, since the claims are drawn to more than a product, and according to 37 CFR 1.475 (e)

the determination whether a group of inventions is so linked as to form a single general inventive concept shall be made without regard to whether the inventions are claimed in separate claims or as alternatives within a single claim.

The claims lack unity of invention and should be limited to only a product, or a process for the preparation, or a use of the said product. In the instant case, Groups I-XII are drawn to various products, processes of making, and the final products do not contain a common technical feature or structure, and do not define a contribution over the prior art, i.e., similar biphenyl phosphonic compounds of Ryono et al. Moreover, the examiner must perform a commercial database search on the subject matter of each group in addition to a paper search, which is quite burdensome to the examiner.

Claims 232 and 241-255 are prosecuted in the case. Claims 83 and 100 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention.

The requirement is still deemed proper and is therefor made FINAL.

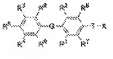
Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4.1 Claims 232 and 241-255 are rejected under 35 U.S.C. 102(a) or 102(e) as being anticipated by Ryono et al. US 2005/004184 A1, see CAS: 141:395288.

Applicants claim compounds/compositions of formula (VIII), i.e.,



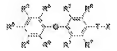
, see claim 232.

Ryono et al. '288 disclose a compound, see RN: 788824-02-2, it clearly anticipate the instant compounds of formula (VIII), wherein the variable R5 represents –OH, the variable G represents –O-, the variable T represents $-(CR^a{}_2)k$ and k is 1, the variable X represents X is $P(O)YR^{11}Y'R^{11}$ and Y or Y' is O, R11 independently

represents hydrogen or alkyl. Dependent claims 241-255 are also rejected along with claim 232 under 35 U.S.C. 102(a) or 102(e).

4.2 Claims 92, 130 and 163-204 are rejected under 35 U.S.C. 102(b) as being anticipated by (1) Ibrahini et al. CAS: 133:14000; (2) Hopper et al CAS: 130:332269; (3) Li et al. US 6,465,687; or (4) Gibbs et al. US 5,519,163.

Applicants claim compounds/compositions of formula (VIII), i.e.,



, see claim 92.

Ibrahini et al. '000 disclose a compound, see RN: 272785-62-3, it clearly anticipate the instant compounds of formula (VIII), wherein the variable R5 represents –OH, the variable G represents $–CH_2-$, the variable T represents $–O(CR^b_2)(CR^a_2)n$ and n is 0, the variable X represents $P(O)YR^{11}Y'R^{11}$ and Y or Y' is O, R11 independently represents hydrogen or alkyl.

Hopper et al. '269 disclose five compound, see RN: 224454-83-5, 224454-86-8, 224454-89-1, 224454-93-7 or 224454-97-1. They clearly anticipate the instant compounds of formula (VIII), wherein the variable R5 represents $–O(CO)R^e$ and R^e represents alkyl, the variable G represents -C(O)-, the variable -T-X represents $–OPO_3H_2$.

Li et al. '687 disclose two compounds, see Examples 14 and 15 in columns 9-10. They clearly anticipate the instant compounds of formula (VIII), wherein the variable R5 represents –OH, the variable G represents -O-, the variable -T-X represents $–CH_2PO_3H_2$.

Gibbs et al. '163 disclose two compounds, see Examples compound no 1 or 5 of the first table in column 5. They clearly anticipate the instant compounds of formula (VIII), wherein the variable R5 represents –OH or –OCH3, the variable G represents -O-, the variable -T-X represents $–CH(OH)PO_3H_2$. Dependent claims 214-255 are also rejected along with claim 92 under 35 U.S.C. 102(b).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

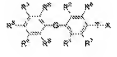
1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the

various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

5.1 Claims 232 and 241-255 are rejected under 35 U.S.C. 103(a) as being obvious over Li et al. US 6,465,687.

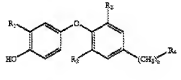
Applicants claim compounds/compositions of formula (VIII), i.e.,



, see claim 232.

Determination of the scope and content of the prior art (MPEP §2141.01)

Li et al. '687 disclose compounds/compositions of formula (I), i.e.,



, wherein the variable n is 0 to 4, the variable R4 represent phosphonic acid or ester thereof (i.e.,  and R5 is hydrogen or alkyl), see columns 2-4 and 23.

Determination of the difference between the prior art and the claims (MPEP §2141.02)

The difference between the instant claims and Li et al. '687 is that the instant variable G of formula (VIII) represents –O- or –S-, while Li et al. represents –O- at the same position. Li et al. '687 compounds/compositions overlap with the instant invention.

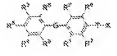
Finding of prima facie obviousness-rational and motivation (MPEP §2142-2143)

One having ordinary skill in the art would find the instant claims 232 and 241-255 prima facie obvious **because** one would be motivated to employ the compounds/ compositions of Li et al. to obtain the instant compounds of formula (VIII), wherein the variable G represents –O- and the variable R5 represent -OH. Dependent claims 241-255 are also rejected along with claim 232 under 35 U.S.C. 103(a).

The motivation to obtain the claimed compounds/compositions derives from known Li et al. compounds would possess similar activities (i.e., compositions) to that which is claimed in the reference.

5.2 Claims 232 and 241-255 are rejected under 35 U.S.C. 103(a) as being obvious over Gibbs et al. US 5,519,163.

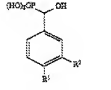
Applicants claim compounds/compositions of formula (VIII), i.e.,



, see claim 232.

Determination of the scope and content of the prior art (MPEP §2141.01)

Gibbs et al. '163 disclose compounds/compositions of formula (I), i.e.,



, wherein the variable R1 represents  , the variable R3-R6 represent hydrogem halogen, alkyl, alkoxy or hydroxyl, see columns 4-5.

Determination of the difference between the prior art and the claims (MPEP §2141.02)

The difference between the instant claims and Gibbs et al. is that the instant variable G of formula (VIII) represents –O- or –S-, while Gibbs et al. '163 represents –O- at the same position. Gibbs et al. '163 compounds/compositions overlap with the instant invention.

Finding of prima facie obviousness-rational and motivation (MPEP §2142-2143)

One having ordinary skill in the art would find the instant claims 232 and 241-255 prima facie obvious **because** one would be motivated to employ the compounds/ compositions of Gibbs et al. '163 to obtain the instant compounds of formula (VIII), wherein the variable G represents –O- and the variable R5 represent –OH or alkoxy. Dependent claims 241-255 are also rejected along with claim 232 under 35 U.S.C. 103(a).

The motivation to obtain the claimed compounds/compositions derives from known Gibbs et al. compounds would possess similar activities (i.e., compositions) to that which is claimed in the reference.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

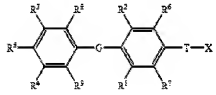
A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6.1 Claims 232 and 241-255 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 13 of Erion et al. US 7,514,419. Although the conflicting claims are not identical, they are not patentably distinct from each other and reasons are as follows.

Applicants claim compounds/compositions of the formula (VIII), wherein when the variable G is selected from –O--, -S- or -CH2-, the variable X is $P(O)YR^{11}Y'R^{11}$, see claim 1.

Erion et al. '419 claims compounds/compositions of the formula (VIII) , i.e.,



, wherein the variables G is selected from -CH2, X is $P(O)YR^{11}Y'R^{11}$, see columns 413-417.

The difference between the instant claims and Erion et al. '419 is that the instant variable G represents –O--, -S- or -CH2-, while Erion et al. '419 represent -CH2- at the same position. Erion et al. '419 compounds overlap with the instant invention.

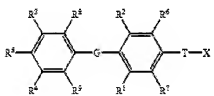
One having ordinary skill in the art would find the instant claims 232 and 241-255 prima facie obvious **because** one would be motivated to employ the compounds of Erion et al. '419 to obtain the instant compounds of the formula (VIII). Dependent claims 241-255 are also rejected along with claim 232 under obviousness-type double patenting.

The motivation to obtain the claimed compounds/compositions derives from Erion et al. '419 similar compounds would possess similar activity (i.e., compositions) to that which is claimed in the reference.

6.2 Claims 232 and 241-255 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 78, 113 and 116 of Erion et al. co-pending application No. 11/816,774. Although the conflicting claims are not identical, they are not patentably distinct from each other and reasons are as follows.

Applicants claim compounds/compositions of the formula (VIII), wherein when the variable G is selected from –O--, -S- or -CH2-, the variable X is $P(O)YR^{11}Y'R^{11}$, see claim 1.

Erion et al. '774 claims compounds/compositions of the formula (VIII) , i.e.,



, wherein the variables G is selected from -CH2 or R^{50}-R^{51}, X is $P(O)YR^{11}Y'R^{11}$, see columns 78 and 113.

The difference between the instant claims and Erion et al. '774 is that the instant variable G represents –O--, -S- or -CH2-, while Erion et al. '774 represent -CH2- or R^{50}-R^{51} at the same position. Erion et al. '774 compounds overlap with the instant invention.

One having ordinary skill in the art would find the instant claims 232 and 241-255 prima facie obvious **because** one would be motivated to employ the compounds of Erion et al. '774 to obtain the instant compounds of the formula (VIII). Dependent claims 241-255 are also provisionally rejected along with claim 232 under obviousness-type double patenting.

The motivation to obtain the claimed compounds/compositions derives from Erion et al. '774 similar compounds would possess similar activity (i.e., compositions) to that which is claimed in the reference.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rei-tsang Shiao whose telephone number is (571) 272-0707. The examiner can normally be reached on 8:30 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph K. McKane can be reached on (571) 272-0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/REI-TSANG SHIAO /

Rei-tsang Shiao, Ph.D.
Primary Patent Examiner
Art Unit 1626

July 21, 2009